Lockout/Tagout - 1910.147 Definitions

Lockout - The placement of a lockout device on an energy - isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Tagout - The placement of a tagout device on an energy - isolating device, in accordance with an established procedure, to indicate that the energy - isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Lockout device - Any device that uses positive means such as a lock, either key or combination type, to hold an energy - isolating device in a safe position, thereby preventing the energizing of machinery or equipment. When properly installed, a blank flange or bolted slip blind are considered equivalent to lockout devices.

Tagout device - Any prominent warning device, such as a tag and a means of attachment, that can be securely fastened to an energy - isolating device in accordance with an established procedure. The tag indicates that the machine or equipment to which it is attached is not to be operated until the tagout device is removed in accordance with the energy control procedure.

Energy-isolating device - Any mechanical device that physically prevents the transmission or release of energy. These include, but are not limited to, manually-operated electrical circuit breakers, disconnect switches, line valves, and blocks.

Capable of being locked out - An energy-isolating device is considered capable of being locked out if it meets one of the following requirements:

- It is designed with a hasp to which a lock can be attached;
- It is designed with any other integral part through which a lock can be affixed;
- It has a locking mechanism built into it; or
- It can be locked without dismantling, rebuilding, or replacing the energy isolating device or permanently altering its energy control capability.

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Affected employee - An employee who performs the duties of his or her job in an area in which the energy control procedure is implemented and servicing or maintenance operations are performed. An affected employee does not perform servicing or maintenance on machines or equipment and, consequently, is not responsible for implementing the energy control procedure. An affected employee becomes an "authorized" employee whenever he or she performs servicing or maintenance functions on machines or equipment that must be locked or tagged.

Authorized employee - An employee who performs servicing or maintenance on machines and equipment. Lockout or tagout is used by these employees for their own protection.

Scope and Application

- Applies to general industry employment and covers
 the servicing and maintenance of machines and
 equipment in which the unexpected start-up or the
 release of stored energy could cause injury to
 employees. (If employees are performing service or
 maintenance tasks that do not expose them to the
 unexpected release of hazardous energy, the
 standard does not apply.)
- The standard does not apply in the following situations:
 - while servicing or maintaining cord and plug connected electrical equipment. (The hazards must be controlled by unplugging the equipment from the energy source; the plug must be under the exclusive control of the employee performing the service and/or maintenance.)
 - during hot tap operations that involve transmission and distribution systems for gas, steam, water, or petroleum products when they are performed on pressurized pipelines; when continuity of service is essential, and shutdown of the system is impractical; and employees are provided with an alternative type of protection that is equally effective.

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Normal Production Operations

The lockout/tagout rule may apply during normal production operations in some instances. If a servicing activity - such as lubricating, cleaning, or unjamming the production equipment - takes place **during** production, employees performing the servicing are covered by lockout/tagout when any of the following conditions occurs:

- The employee must either remove or bypass machine guards or other safety devices, resulting in exposure to hazards at the point of operation;
- The employee is required to place any part of his or her body in contact with the point of operation of the operational machine or piece of equipment; or
- The employee is required to place any part of his or her body into a danger zone associated with a machine operating cycle.

In the above situations, the equipment must be de-energized and locks or tags must be applied to the energy-isolation devices.

Energy Control Program

- Intended to prevent the unexpected energizing or the release of stored energy in machines or equipment on which servicing and maintenance is being performed by employees
- Consists of documented energy control procedures, an employee training program, and periodic inspections of the procedures
- Employers have flexibility to develop a program that meets the needs of their particular workplace

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Energy Control Procedure

- The written procedures must identify the information that authorized employees must know in order to control hazardous energy during service or maintenance
- At a minimum, it includes, but is not limited to, the following elements:
 - a statement on how the procedure will be used:
 - the procedural steps needed to shut down, isolate, block, and secure machines or equipment;
 - the steps designating the safe placement, removal, and transfer of lockout/tagout devices and who has the responsibility for them; and
 - the specific requirements for testing machines or equipment to determine and verify the effectiveness of locks, tags, and other energy control measures.

Energy Control Procedure (cont'd)

- Procedure must include the following steps:
 - 1. preparing for shutdown
 - 2. shutting down the machine(s) or equipment
 - isolating the machine or equipment from the energy source(s)
 - applying the lockout or tagout device(s) to the energy-isolating device(s)
 - safely releasing all potentially hazardous stored or residual energy, and
 - verifying the isolation of the machine(s) or equipment prior to the start of service or maintenance work.
- In addition, before lockout or tagout devices are removed and energy is restored to the machines or equipment, certain steps must be taken to re-energize equipment after service is completed, including:
 - assuring that machines or equipment components are operationally intact
 - notifying affected employees that lockout or tagout devices are removed from each energy-isolating device by the employee who applied the device.

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Energy-Isolating Devices

- Guards against accidental machine or equipment start-up or the unexpected re-energization of equipment during servicing or maintenance
- These include, but are not limited to, manually-operated electrical circuit breakers, disconnect switches, line valves, and blocks
- Two types: those capable of being locked and those that are not
- When the energy-isolating device cannot be locked out, the employer must use tagout or modify or replace the device to make it capable of being locked
- When using tagout, employers must train their employees in the limitations of tags
- Whenever major replacement, repair, renovation or modification of machines or equipment is performed and whenever new machines or equipment are installed or purchased, the energy-isolating devices for such machines or equipment must be lockable

Requirements for Lockout/Tagout Devices

Whichever devices are used, they must be singularly identified, must be the *only* devices used for controlling hazardous energy, and must meet the following requirements:

- Durable Lockout and tagout devices must withstand the environment to which they are exposed for the maximum duration of the expected exposure. Tagout devices must be constructed and printed so that they do not deteriorate or become illegible, especially when used in corrosive (acid and alkali chemicals) or wet environments.
- Standardized Both lockout and tagout devices must be standardized according to either color, shape, or size. Tagout devices must also be standardized according to print and format.
- Substantial Lockout and tagout devices must be substantial enough to minimize early or accidental removal. Locks must be substantial to prevent removal except by excessive force of special tools such as bolt cutters or other metal cutting tools. Tag means of attachment must be non-reusable, attachable by hand, self-locking and non-releasable, with a minimum unlocking strength of no less than 50 pounds.

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Requirements for Lockout/Tagout Devices (cont'd)

The device for attaching the tag also must have the general design and basic characteristics equivalent to a one-piece nylon cable tie that will withstand all environments and conditions.

 Identifiable - Locks and tags must clearly identify the employee who applies them. Tags must also warn against hazardous conditions if the machine or equipment is energized and must include a legend such as the following: DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, DO NOT OPERATE.

Employee Training

- The employer must provide effective initial training and retraining as necessary and must certify that such training has been given to all employees covered by the standard. The certification must contain each employee's name and dates of training.
- The employer's training program for authorized employees (those who are charged with the responsibility for implementing the energy control procedures and performing the service and maintenance) must cover, at minimum, the following areas:
 - details about the type and magnitude of the hazardous energy sources present in the workplace, and
 - the methods and means necessary to isolate and control those energy sources (that is, the elements of the energy control procedure)
- Affected employees (usually the machine operators or users) and all other employees need only be able to (1) recognize when the control procedure is being implemented, and (2) understand the purpose of the procedure and the importance of not attempting to start up or use the equipment that has been locked or tagged out.

 		
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Employee Training (cont'd)

- Every training program must ensure that all employees understand the purpose, function and restrictions of the energy control program and that authorized employees possess the knowledge and skills necessary for the safe application, use, and removal of energy controls.
- Training programs used for compliance with this standard, which is performance-oriented, should deal with the equipment, type(s) of energy, and hazard(s) specific to the workplace being covered.
- Retraining must be provided, as required, whenever there is a change in job assignments, a change in machines, equipment or processes that present a new hazard, or a change in energy control procedures.
- Additional retraining must be conducted whenever a periodic inspection reveals, or whenever the employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedure.

Periodic Inspections

- Periodic inspections must be performed at least annually to assure that the energy control procedures (locks and tags) continue to be implemented properly and that the employees are familiar with their responsibilities under those procedures.
- In addition, the employer must certify that the periodic inspections have been performed. The certification must identify the machine or equipment on which the energy control procedure was used, the date of the inspection, the employees included in the inspection, and the name of the person performing the inspection.
- For lockout procedures, the periodic inspection must include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.
- When a tagout procedure is inspected, a review on the limitation of tags, in addition to the above requirements, must also be included with each affected and authorized employee.

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